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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,296	02/06/2004	Ramesh B. Poola	GP-304476	5419

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EXAMINER	
MCMAHON, MARGUERITE J	

ART UNIT	PAPER NUMBER
3747	

DATE MAILED: 05/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

Office Action Summary	Application No.	Applicant(s)	
	10/774,296	POOLA ET AL.	
	Examiner	Art Unit	
	Marguerite J. McMahon	3747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-12 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-12 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2/6/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (6,513,476) in view of Zhu et al (6,182,630). Liu et al show everything except they do not disclose the diameter of the piston. Zhu et al teach that it is old in the art to utilize a piston having a diameter of at least 180 millimeters (see column 4, lines 1-10). It would have been obvious to one of ordinary skill in the art to modify the piston of Liu et al by specifying that the diameter should be at least 180 millimeters, in order to accommodate a large engine application.

Claims 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (6,513,476) in view of Zhu et al (6,182,630) as applied to claims 1-4 above, and further in view of Paro (5,553,585). Liu et al in view of Zhu et al show everything except utilizing an anti-polish ring positioned at an upper portion of the liner wall, which projects into the cylinder while the piston is recessed substantially the same distance that the ring projects, the liner wall having an annular slot which receives the anti-polish ring. Paro teaches that it is old in the art to employ an anti-polish ring positioned at an upper portion of the liner wall, which projects into the cylinder while the piston is recessed substantially the same distance that the ring projects, the liner wall having an annular slot which receives the anti-polish ring. It would have been obvious to one of ordinary skill in the art to modify Liu et al in view of Zhu et al by employing the anti-polish ring of Paro, in order to remove carbon deposits from the piston. Furthermore, it would have been obvious to one of ordinary skill to form the ring integrally with the liner, as this is an

art recognized equivalent to forming the ring separately and later joining it with the liner, known for the same purpose, as evidenced by applicant claiming both alternatives.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paro (5,553,585). Paro shows everything except the anti-polish ring being integrally formed with the liner. It would have been obvious to one of ordinary skill to form the ring integrally with the liner, as this is an art recognized equivalent to forming the ring separately and later joining it with the liner, known for the same purpose, as evidenced by applicant claiming both alternatives.

Response to Arguments

Applicant's arguments filed 2/24/05 have been fully considered but they are not persuasive.

Applicant notes that Liu et al (6,513,476) is silent as to the diameter of the piston. Liu et al have not been relied upon to show diameter size of the piston. The examiner has relied upon Liu et al (6,513,476) merely to show an acute re-entrant angle.

Applicant notes that Zhu et al (6,182,630) shows an obtuse re-entrant angle, rather than an acute re-entrant angle, as cited in the claims. Zhu et al have not been relied upon to show an acute re-entrant angle. The examiner has relied on Zhu et al (6,182,630) merely to show that large diameter pistons are known in the art.

In fact, Applicant is apparently already well aware that piston diameters of 180mm or greater are well known in the art. Applicant argues that it is not obvious to provide a large diameter piston with an acute re-entrant angle, and that it is conventional to provide only small and medium size diameter pistons with an acute re-

entrant angle. The examiner has relied upon Liu et al to show that the acute re-entrant feature is old in the art, and has also cited Mielke (5,778,846), Martins Leites et al (5,317,958), and Bruni (5,081,968). All three of these additional cited references as well as Liu et al show the acute re-entrant angle in the piston recess, and none of these references mention anything about the size of the piston. Size appears to be a non-issue for all four of the references, which show the acute re-entrant angle feature. Furthermore, a change in size is generally recognized as being within the level of ordinary skill in the art. Note also MPEP 2144.04(IV), which states:

> A. Changes in Size/Proportion
>
> *In re Rose* , 220 F.2d 459, 105 USPQ 237 (CCPA 1955) (Claims directed to a lumber package "of appreciable size and weight requiring handling by a lift truck" where held unpatentable over prior art lumber packages which could be lifted by hand because limitations relating to the size of the package were not sufficient to patentably distinguish over the prior art.); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976) ("mere scaling up of a prior art process capable of being scaled up, if such were the case would not establish patentability in a claim to an old process so scaled." 531 F.2d at 1053, 189 USPQ at 148.).
>
> In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Therefore, Applicant's arguments that the large size of piston diameter of the instant application in combination with the acute re-entry angle is unobvious is found to be unconvincing.

Applicant further argues that Paro does not teach that the anti-polish ring is an integral part of the cylinder liner, and that making the ring integral is unobvious. The examiner maintains that it would have been obvious to one of ordinary skill to form the ring integrally with the liner, as this is an art recognized equivalent to forming the ring separately and later joining it with the liner, known for the same purpose, as evidenced by applicant claiming both alternatives. Furthermore it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893). Therefore, Applicant's assertion that the ring being integral with the liner is unobvious is unconvincing.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marguerite J. McMahon whose telephone number is 703-308-1956. The examiner can normally be reached on flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yuen Henry can be reached on 703-308-1946. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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MARGUERITE MCMAHON
PRIMARY EXAMINER